# Calorimetry Quiz II

Remember, for full marks you MUST use proper SIGNIFICANT and UNITS in your answer

1. 500.0g of propane (C3H8) was burned in a calorimeter (C = 0.950 J/˚C) filled with 1.00kg of water. Both the water and calorimeter started at room temperature (23.0˚C) and the final temperature was 80.0˚C. What is the MOLAR enthalpy of combustion of propane?

2. Draw a heat transfer diagram for the following:

(be sure to label it so I know what the system and surroundings are, and the flow of energy)

a) Burning Ethane in Air b) Dissolving NaCl in water in a Calorimeter (+∆H)

A student was trying to find the enthalpy of a substance that was **burned** in a calorimeter. She did all the calculations but found that she got a positive number for enthalpy, although she knew it was supposed to be an exothermic reaction. What did she most likely do wrong? (Hint: think 1st law thermodynamics)

Student answer:

qsystem = qsurroundings

∆Hcomb = mc∆T

∆Hcomb = (100.0g)(4.184J/g˚C)(100˚C)

∆Hcomb = 41840 J